To: FCC Wireline Competition Bureau

From: David Ehreth

Subject: Net Neutrality

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CC: Congressman Jared Huffman

Background: Internet History

The modern Internet was invented by a publicly funded organization, the Defense Advanced Research Projects Agency for the purpose of sharing information amongst researchers in different locations. The public paid for early development of the Internet.

Later, as private enterprise adapted the Internet for broad public use, it became clear that there were two methods by which the Internet could reach homes: by wire of some sort and by radio transmissions. The first wires used for Internet access were telephone lines connected by analog modems to the switched telephone network. The vast majority of these wires were put in place by the Government regulated monopoly, AT&T. AT&T and other smaller telephone companies enjoyed privileged access to facilities needed to place these wires through Government grant of limited monopoly status that enabled (and required) these companies to provide wires to all citizens because it was unquestionably in the interest of the public to provide telephone coverage to all citizens of the United States, no mater their location. To provide this service, vast publically owned resources were turned over to the telephone providers in return for a guarantee of equal access to service.

Later, Community Access Television (CATV), more commonly now know as Cable TV service took advantage of the public resources granted to the telephone companies to add their wires to the existing "telephone poles" and power poles, the vast majority of which sit on publically owned lands or lands privately owned with forced Public Utility right-of-way. In most communities, CATV companies were granted partial or complete monopoly status in return for serving the public interest in those communities.

Over time, both telephone companies and CATV companies adapted their wires to carry digital signals, enabling higher-speed Internet connections to be made.

The radio transmission of Internet signals use two general methods: satellite transmission and localized broadband transmission of digital signals that are capable of carrying Internet traffic at speeds that, while generally slower than wire-based transmission, were useful in serving rural or harder to reach locations. Unlike the history of electric power distribution and telephone distribution in the United States under the Rural Electrification Authority (REA), the Government did not require Internet service to be provided to all

citizens. As a result, most rural citizens of the United States do not have the advantage of high-speed wire connection to the Internet and rely on radio transmissions of Internet signals if they receive Internet connections at all. As with wire based Internet signals, the medium over which radio transmissions are enabled is the electromagnetic spectrum, more commonly known as radio frequency bands. By law, these bands are the property of the citizens of the United State of America and the Government regulates their use.

The Internet itself was developed in its modern form by hundreds of thousands of individuals and companies and today serves as an important method of communications and commerce to the citizens of the United States of America and the world. Like the development of the Interstate Highway System and other important road systems in the United States, the work of thousands, if not millions of American combined with the contribution their property in the form of right-of-way and grants of monopoly status to certain companies during the development of the distribution technology, have given the Internet the unique value that it has today.

Background: Telecommunications Regulation

In 1984, the Modified Final Judgment (MFJ) was issued that broke up the monopoly that AT&T had enjoyed since nearly the inception of telephony. The seven resulting "Baby Bells" (Regional Bell Operating Companies, RBOCs) inherited all of the physical resources of the former "Ma Bell". These were not free enterprise companies rising through entrepreneurial vigor. Rather, the Baby Bells were born with the ownership of trillion of dollars worth of pre-existing infrastructure, giving them an advantage over anyone attempting to start a telephone company from scratch. Today, virtually nothing is left of the Competitive Local Exchange Carriers (CLECs) who attempted to challenge the RBOCs. In time, the overwhelming advantages of the RBOCs suppressed the nascent CLECs to the point of extinction. Finally, the RBOCs merged together leaving only two: AT&T (not the old one) and Verizon.

The RBOCs were not allowed to provide end-user data connections or television signals until the Telecommunications Act of 1996. At that time, the telephone companies were able to successfully argue that they should be able to compete with CATV providers for delivery of broadband services, a term used to describe services that require lots of information bits per second for services such as Internet access and television signals.

Meanwhile, CATV companies, though less regulated, were nonetheless the beneficiaries of local monopoly status in the communities they served. These companies were allowed to provide broadband in all forms. To do this, they used the public rights-of-way (e.g., telephone poles) that had originally been developed by the monopoly, AT&T.

Background: Development of the Entertainment Industry

Entertainment and other forms of non-print information were first delivered to the public in privately owned theaters or by radio and then later by television, both over publically owned radio and television frequencies. Early technology limited the number of sources

for both radio and television. As a result, the entertainment and information industries developed complimentary business models where large studios and large networks developed programming and information content. For technologies prior to 1990, this made perfect sense. When CATV changed the model from limited numbers of channels to a nearly unlimited number of channels, the older model began to break down. In time, the owners of the distribution networks bought the developers of the content. In the new model, the medium and the message merged, giving the company providing the wire to the house a reason to want the user of the wire to be directed to their content, not the content of others.

Background: How the Internet Works

For those without a background in engineering or science, the best way to look at the Internet is to see it like the road system in America today. Smaller, lower traffic streets serve houses. These streets usually combine into larger boulevards that have higher capacity to carry traffic. The boulevards have access to highways and freeways that carry large volumes of traffic at relatively high speeds. The beauty of the Internet and our road system is that anybody can use it to go anywhere. Traffic runs according to rules that everybody can follow, equally.

Users of the Internet can go to locations that charge money for goods or service and to locations that are not involved with commerce for free. This is just the same as a user of our road systems going to the cleaners, a doctor, a bank or a park.

In certain locations, tolls are charged for the use of roadways. Mostly, these tolls are levied on publicly owned roads for maintenance or to encourage behavior (car pooling, etc.) deemed to be in the public interest. In certain cases, privately owned turnpikes have been developed where a private entity has built a road that can only be accessed for a fee. What these toll roads all have in common and share with the Internet is that none of the operators of the roads knows, or cares, where somebody on the road is going. Everybody who uses the toll road is charged the same, no matter where they are going and travels at the same speed. This is a fundamental similarity with the Internet.

As for how the “roads” on the Internet are managed, the Internet is based on a technology called Internet Protocol (IP). Internet Protocol is a very simple and effective method of transporting information between points. Internet Protocol has no inherent ability to limit data speeds or, for that matter, inspect and approve or disapprove the information passing between two, or more, users. A rival technology that appeared during the time the Internet was being developed, Asynchronous Transfer Mode (ATM), was just the opposite. It did provide for speed control based on a quality of service (QOS) and did require that the type of service be understood and that the network operator would have the right to both know and regulate services on such a network. For myriad reasons, ATM was rejected as a primary protocol for the Internet or similar networks. IP, its simplicity and the fact that it was peer-to-peer oriented (which means users on both ends are equal and that nobody in the middle is trying to control them) became the vision of the Internet.

Argument in Support of Net Neutrality

The key points in favor of Net Neutrality are these:

1) **Ownership of the Internet:** The Internet far too valuable and important to modern life to be given to any company.

2) **Need for Government Regulation:** Access to the Internet is like access to telephone, gas and electricity and should be regulated by the government. Government regulation of Internet access is in the public interest. The public has this right because a) the Internet is an essential part of modern life, b) Internet access uses vast public resources c) All Americans need access to the Internet and will not get it without the same type of government regulation that made it possible to provide telephones and electricity to every house in America (e.g., Rural Electrification Authority (REA) and related government regulation).

3) **The Public has a Vested Interest:** Internet Service Providers (ISPs) can only offer service by using publicly owned resources (physical right-of-way or electromagnetic spectrum). Therefore, the public has a preeminent right to expect equal access to all services.

4) **ISP Refusal to Provide Better Service:** The argument that without the ability to choke the Internet, ISPs can't invest in better service is a red herring. The quality of the service is not at issue with Net Neutrality. ISPs can provide better access service if they want to and it is well established that the public would pay more for that faster service. This discussion is not about ISPs desire to offer better service, it is about taking control of the Internet itself in order to make more money at the expense of the public interest. This was never the vision of the Internet or Internet Protocol that is at the foundation of the Internet.

5) **ISPs Have Done a Terrible Job:** The United States is not even in the Top Ten countries for Internet access quality. The other countries that have better service and Net Neutrality challenge the claim that ISPs need to choke access on the Internet in order to provide better service.

6) **Possibility of Censorship:** Authorizing a "data-rate choking" capability into the Internet opens the door to censorship. This is a dangerous step that serves no public interest. In the short term, it may enable ISPs make more money, but in the long term invites the possibility for censorship or other forms of behavior that would interfere with the public's best interests.

Summary

If complete deregulation of the Internet were in the public interest, we would already have Internet to every home in America. We don't. Why? Because ISPs know that there

is no economic advantage in serving rural America. The early telephone companies knew this, as did the early electric companies. Only through the REA and government regulation did all Americans receive telephone and electrical services. That is historical fact.

The Internet is the new road system for America and far too valuable to be "owned" or allowed to be limited or diminished by a tiny number of companies who depend on public resources for their very existence. Even on privately owned roads in America, all who pay are free to transit without having to answer the question, "Where are you going?" It is one thing entirely to offer a service with a particular data rate or "speed" that anyone who pays can access. It is completely different to demand to know where you are going so that you can choke the ability to get there.

There are only six reasons that the government exists defined in the preamble to the Constitution. The sixth, and final, reason for the government is to, "…Secure the Blessings of Liberty on ourselves and our Posterity…" If ever there were a moment where those blessings were at risk, if ever there were a reason for the government, based on our Constitution, to act on behalf of the people, this is it. Please vote to preserve Net Neutrality.